REMARKS

Claims 1-29 are pending in the present application. Claims 13-29 have been allowed. Claims 1-3, 5, 6, 8, and 9 have been rejected. Claims 4, 7, and 10-12 have been objected to. Reconsideration and allowance of the claims is respectfully requested in view of the following remarks.

Figure 1 has been objected to because it lacks the legend --Prior Art--. Claims 1, 3, and 5 have been rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,318,115 to Yoshikawa. Claims 2, 6, 8, and 9 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa in view of applicant's admitted prior art. Claims 4, 7, and 10-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Figure 1 has been amended to include the legend --Prior Art--.

Claim 1 recites:

A vertical color filter detector group formed on a semiconductor substrate and comprising at least three detector layers configured to collect photo-generated carriers of a first polarity, separated by additional intervening reference layers configured to collect and conduct away photo-generated carriers of the opposite polarity, said at least three detector layers disposed substantially in vertical alignment with each other and having different spectral sensitivities as a function of their different depths in the semiconductor substrate.

The Examiner maintains that Figures 1-29 and column 3, line 65 through column 4, line 10 of Yoshikawa teach all the elements of claim 1. However, neither the figures nor the text of Yoshikawa illustrate "*at least three detector layers* configured to collect photo-generated carriers of a first polarity, *separated by additional intervening reference layers* configured to collect and conduct away photo-generated carriers of the opposite polarity." (Italics added). The text cited by the Examiner refers to Figure 3. "The electrode terminals 7 and 8 form, in combination, output terminals of a first photodiode PD_1, and the electrode terminals 8 and 9 form, in combination, output terminals of a second photodiode PD_2." Col. 4, lines 15-18. The quoted portion of Yoshikawa also refers to Figure 3. If substrate 1, layer 2 and region 4 (see Figure 3 and col. 3 line 66 - col. 4 line 2) are the three detector layers referenced by the Examiner, then they clearly fail to read on claim 1. Claim 1 requires, in part, that the three detector layers are configured to collect photo-generated carriers of a first polarity. Substrate 1 of P type conductivity and layer 2 of N type conductivity, which comprise the first photodiode, cannot both collect photo-generated carriers of a first polarity. Likewise, layer 2 of N type conductivity and region 4 of P type conductivity, which comprise the second photodiode, cannot both collect photo-generated carriers of a first polarity. Furthermore, if the Examiner intended that substrate 1, layer 2 and region 4 represent the three detector layers then it is clear that there are no additional, intervening reference layers, as recited in claim 1. Finally, none of the Figures in Yoshikawa illustrate each and every element of claim 1. If the Examiner maintains the rejection then Applicant respectfully requests that the Examiner point out with more particularity where each and every claimed element is found.

Claim 1 is in condition for allowance. Claims 2-12 depend from claim 1 and are also in condition for allowance. Applicant respectfully requests that the Examiner allow all the claims and direct the application to issue.

In view of the foregoing, consideration and an early allowance of this application are earnestly solicited.

Respectfully submitted,
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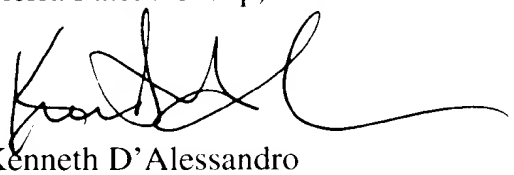

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